In the claims:

1. (currently amended) A fuel cell system comprising

a fuel cell unit; and

a catalytically active reactor unit ~~(3)~~ for at least partial chemical transformation of an operating medium stream ~~(1)~~, wherein the catalytically active reactor unit ~~(3)~~ has a catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream and the catalytically active reactor unit comprises at least one control means ~~(5, 8, 11, 12, 13)~~ for controlling and/or for changing the catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream ~~(1)~~, wherein said at least one control means ~~(5, 8, 11, 12, 13)~~ comprises at least one diaphragm device ~~(5)~~ changeable transverse to a flow direction of the operating medium stream ~~(1)~~.

2. (currently amended) The fuel cell system as defined in claim 1, wherein said catalytically active reactor unit ~~(3)~~ is a reformer, gas purifier stage and/or a combustor.

3. (currently amended) The fuel cell system as defined in claim 1, wherein said at least one control means ~~(5, 8, 11, 12, 13)~~ comprises means for controlling and/or changing a cross-sectional area ~~(2)~~ of said reactor volume ~~(4)~~ and said cross-sectional area ~~(2)~~ extends transverse to a flow direction of the operating medium stream ~~(1)~~.

Claim 4 cancelled.

5. (currently amended) A fuel cell system, comprising:

a fuel cell unit; and

a catalytically active reactor unit ~~(3)~~ for at least partial chemical transformation of an operating medium stream ~~(1)~~, wherein the catalytically active reactor unit ~~(3)~~ has a catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream and the catalytically active reactor unit comprises at least one control means ~~(5, 8, 11, 12, 13)~~ for controlling and/or for changing the catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream ~~(1)~~, wherein said at least one control means ~~(5, 8, 11, 12, 13)~~ comprises a control element ~~(8)~~ movable in a flow direction of the operating medium stream ~~(1)~~.

6. (currently amended) The fuel cell system as defined in claim 5, wherein said control element ~~(8)~~ comprises a pipe.

7. (currently amended) The fuel cell system as defined in claim 5, wherein said control element ~~(8)~~ comprises, at least partially, a nozzle and/or an injector.

8. (currently amended) A fuel cell system, comprising:

a fuel cell unit; and

a catalytically active reactor unit ~~(3)~~ for at least partial chemical transformation of an operating medium stream ~~(1)~~, wherein the catalytically active reactor unit ~~(3)~~ has a catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream and the catalytically active reactor unit comprises at least one control means ~~(5, 8, 11, 12, 13)~~ for controlling and/or for changing the catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream ~~(1)~~, wherein said at least one control means ~~(5, 8, 11, 12, 13)~~ comprises means for controlling a length of said reactor volume ~~(4)~~, said length extending in a flow direction of the operating medium stream ~~(1)~~.

9. (currently amended) The fuel cell system as defined in claim 1, wherein said catalytically active reactor unit ~~(3)~~ has at least two outlet openings ~~(13, 15)~~ for outflow of a converted operating medium flow.

10. (currently amended) A fuel cell system, comprising:

a fuel cell unit; and

a catalytically active reactor unit ~~(3)~~ for at least partial chemical transformation of an operating medium stream ~~(1)~~, wherein the catalytically active reactor unit ~~(3)~~ has a catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream ~~(1)~~ that flows in a predetermined flow direction through the catalytically active reactor unit ~~(3)~~ to an outlet opening ~~(15)~~, and the catalytically active reactor unit comprises at least one control means ~~(5, 8, 11, 12, 13)~~ for controlling and/or for changing the catalytically active reactor volume

~~(4)~~ acted on by the operating medium stream ~~(1)~~, wherein at least another outlet opening ~~(13)~~ is arranged upstream of said first-mentioned outlet another in the flow direction of the operating medium stream ~~(1)~~.

11. (currently amended) The fuel cell system as defined in claim ~~9~~, further comprising at least one control valve ~~(11, 12)~~ for opening or closing at least one of said outlet openings ~~(13, 15)~~ of the catalytically active reactor unit ~~(3)~~.

12. (currently amended) The fuel cell system as defined in claim 9, wherein said catalytically active reactor unit ~~(3)~~ is provided with a plurality of transverse channels ~~(14)~~ extending transversely to a flow direction of the operating medium stream ~~(1)~~.

13. (original) The fuel cell system as defined in claim 1, wherein said catalytically active reactor unit comprises at least two reactor regions with respective different permeabilities.

14. (currently amended) A fuel cell system, comprising:

a fuel cell unit; and

a catalytically active reactor unit ~~(3)~~ for at least partial chemical transformation of an operating medium stream ~~(1)~~, wherein the catalytically active reactor unit ~~(3)~~ has a catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream and the catalytically active reactor unit comprises at

least one control means ~~(5, 8, 11, 12, 13)~~ for controlling and/or for changing the catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream ~~(1)~~, wherein said catalytically active reactor unit comprises at least two reactor regions with respective different catalytically active coatings.

15. (previously presented) A vehicle containing said fuel cell system as defined in claim 1.

16. (currently amended) A method of operating a fuel cell system, wherein said fuel cell system comprises a fuel cell unit and a catalytically active reactor unit ~~(3)~~ for at least partial chemical transformation of an operating medium stream ~~(1)~~, wherein the catalytically active reactor unit ~~(3)~~ has a catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream ~~(1)~~ and the catalytically active reactor unit comprises at least one control means for controlling and/or for changing the catalytically active reactor volume ~~(4)~~ acted on by the operating medium stream ~~(1)~~; said method comprising adjusting said catalytically active reactor volume ~~(4)~~ with said at least one control means so that a smaller reactor volume is acted on by the operating medium stream ~~(1)~~ during partial load operation than during full load operation, wherein said at least one control means comprises a variable diaphragm device ~~(5a, 5b, 5c)~~ arranged transversely to a flow direction of said operating medium stream ~~(1)~~ and said adjusting comprises changing a size of said variable diaphragm device.

Claims 17-18 cancelled.